

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A digital delay line for use in a 3D audio sound system, comprising:

a first digital delay module providing a choice of digital delay within a first digital resolution for use in said 3D audio sound system, said first digital resolution being an digital integer value; and

a second digital delay module in series with said first digital delay module, said second digital delay module providing a choice of a plurality of additional digital fractional delays, each of said additional digital fractional delays being less than said first digital resolution;

wherein said first digital resolution is added to said additional fractional digital delays for use in said 3D audio sound system to create a perceived positional sound.

2. (original) The digital delay line for use in a 3D audio sound system according to claim 1, wherein said first delay module comprises:

a first-in, first out buffer.

3. (currently amended) The digital delay line for use in a 3D audio sound system according to claim 1, wherein said second delay module comprises:

a choice of any one of a plurality of polyphase filters, each of said polyphase filters providing an additional digital fraction delay less than said first digital resolution.

4. (original) The digital delay line for use in a 3D audio sound system according to claim 1, further comprising:

a localization control module comprising an interaural time delay look-up table associating desired sound source locations with a particular interaural time delay.

5. (currently amended) The digital delay line for use in a 3D audio sound system according to claim 4, wherein said localization control module further comprises:

an integer and fractional digital delay selector adapted to determine a first digital time delay for use by said first digital delay module and said additional digital fractional delay for use by said second digital delay module.

6. (currently amended) The digital delay line for use in a 3D audio sound system according to claim 1, wherein:

said first digital resolution is based on a sampling rate of a digital audio signal.

7. (currently amended) A method for providing an interaural time delay in a digital 3D sound system, comprising:

selecting one of a plurality of available first digital time delays having a first digital resolution between each of said plurality of available first digital time delays, said first digital resolution being an digital integer value providing a rough estimate of a desired interaural time delay;

additionally selecting one of a plurality of available second digital time delays, each of said plurality of available second digital time delays being a digital fractional delay providing a highly refined additional digital time delay; and

adding said selected first digital time delay and said second digital time delay to provide a desired interaural time delay for use in said digital 3D sound system to create a perceived positional sound.

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8. (currently amended) The method for providing an interaural time delay in a digital 3D sound system according to claim 7, wherein:

said desired interaural time delay relates to a desired interaural time delay for one ear of a listener; and

said first digital time delay relates to a desired interaural time delay for a second ear of said listener.

9. (currently amended) The method for providing an interaural time delay in a digital 3D sound system according to claim 7, wherein:

said plurality of available digital time delays are based on a sampling rate of a digital audio signal.

10. (original) The method for providing an interaural time delay in a digital 3D sound system according to claim 7, further comprising:

fixing a first interaural time delay with respect to a first ear of a listener; and

providing said desired interaural time delay with respect to a second ear of said listener.

11. (currently amended) Apparatus for providing an interaural time delay in a digital 3D sound system, comprising:

means for selecting one of a plurality of available first digital time delays having a first digital resolution between each of said plurality of available first digital time delays, said first digital resolution being an digital integer value providing a rough estimate of a desired interaural time delay;

means for additionally selecting one of a plurality of available second digital time delays, each of said plurality of available second digital time delays being a digital fractional delay providing a highly refined additional interaural time delay; and

means for adding said selected first digital time delay and said second digital time delay to provide a desired interaural time delay for use in said digital 3D sound system to create a perceived positional sound.

12. (currently amended) The apparatus for providing an interaural time delay in a digital 3D sound system according to claim 11, wherein:

said desired interaural time delay relates to a desired interaural time delay for one ear of a listener; and

said first digital time delay relates to a desired interaural time delay for a second ear of said listener.

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13. (currently amended) The apparatus for providing an interaural time delay in a digital 3D sound system according to claim 11, wherein:

said plurality of available digital time delays are based on a sampling rate of a digital audio signal.

14. (original) The apparatus for providing an interaural time delay in a digital 3D sound system according to claim 11, further comprising:

means for fixing a first interaural time delay with respect to a first ear of a listener; and

means for providing said desired interaural time delay with respect to a second ear of said listener.
